WHAT IS CLAIMED IS:

1. An apparatus for transmitting asynchronous transfer mode (ATM) adaptation layer-2 (AAL2) type ATM cells (AAL2 cells), comprising:

an AAL transmitter that generates one or more AAL cells by multiplexing N AAL packets, generated by adding an AAL packet header to an i^{th} data subset of an original user data set;

an AAL receiver that restores the original user data set by demultiplexing the N AAL packets; and

an AAL2 transmitter that generates one or more of the AAL2 cells by multiplexing M common part sublayer (CPS) packets, generated by adding a CPS packet header to a j^{th} data subset of the restored original user data set.

2. The apparatus of claim 1, wherein the AAL packet header includes a sequence number of the i^{th} data subset.

3. The apparatus of claim 2, wherein the AAL packet header further includes a routing tag field that identifies the original user data set and a length indicator field that indicates the length of the i^{th} data subset.

4. The apparatus of claim 3, wherein the AAL packet header further includes a C-FLAG field that indicates whether the i^{th} data subset represents the N^{th} data subset of the original user data set.

5. The apparatus of claim 1, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field, which indicates a starting location of an i^{th} AAL packet.

6. An apparatus for receiving asynchronous transfer mode (ATM) adaptation layer-2 (AAL2) type ATM cells (AAL2 cells), comprising:

an AAL2 receiver that receives one or more of the AAL2 cells, containing common part sublayer (CPS) packets corresponding to an original user data set, and restores the original user data set by demultiplexing the CPS packets; and

an AAL transmitter that generates one or more AAL cells by multiplexing N AAL packets, generated by adding an AAL packet header to an i^{th} data subset of the restored original user data set, wherein

i and N are positive integers and $1 \leq i \leq N$.

7. The apparatus of claim 6 further comprising an AAL receiver that restores the original user data set by demultiplexing the N AAL packets.

8. The apparatus of claim 6, wherein the AAL packet header includes a sequence number of the i^{th} data subset, a routing tag field identifying the original user data set, and a length indicator field indicating the length of the i^{th} data subset.

9. The apparatus of claim 8, wherein the AAL packet header further includes a C-FLAG field that indicates whether the i^{th} data subset represents the N^{th} data subset of the restored original user data set.

10. The apparatus of claim 6, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field, which indicates a starting location of an i^{th} AAL packet.

11. A method for transmitting asynchronous transfer mode (ATM) adaptation layer-2 (AAL2) type ATM cells (AAL2 cells), comprising:

generating N AAL packets by adding an AAL packet header to an i^{th} data subset of an original user data set;

generating one or more AAL cells by multiplexing the generated N AAL packets;

restoring the original user data set by demultiplexing the N AAL packets included in the AAL cells;

generating M common part sublayer (CPS) packets by adding a CPS packet header to a j^{th} data subset of the restored original user data set;

generating one or more of the AAL2 cells by multiplexing the M CPS packets; and

transmitting the AAL2 cells to a receiving system through a connection line, wherein i, j, N, and M are positive integers, $1 \leq i \leq N$, and $1 \leq j \leq M$.

12. The method of claim 11, wherein the AAL packet header includes a sequence number of the i^{th} data subset.

13. The method of claim 12, wherein the AAL packet header further includes a routing tag field, identifying the original user data set, and a length indicator field, indicating the length of the i^{th} data subset.

14. The method of claim 13, wherein the AAL packet header further includes a C-FLAG field that indicates whether the i^{th} data subset represents the N^{th} data subset of the original user data set.

15. The method of claim 11, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field, which indicates a starting location of an i^{th} AAL packet.

16. A method of receiving asynchronous transfer mode (ATM) adaptation layer 2 (AAL2) type ATM cells (AAL2 cells), comprising:

receiving one or more AAL2 cells containing common part sublayer (CPS) packets corresponding to an original user data set;

restoring the original user data set by demultiplexing the CPS packets;

generating N AAL packets by adding an AAL packet header to an i^{th} data subset of the restored original user data set; and

generating one or more AAL cells by multiplexing the N AAL packets, wherein

i and N are positive integers and $1 \leq i \leq N$.

17. The method of claim 16, further comprising restoring the original user data set by demultiplexing the N AAL packets included in the one or more AAL cells.

18. The method of claim 16, wherein the AAL packet header includes a sequence number of the i^{th} data subset, a routing tag field identifying the original user data set, and a length indicator field indicating the length of the i^{th} data subset.

19. The method of claim 18, wherein the AAL packet header further includes a C-FLAG field that indicates whether the i^{th} data subset represents the N^{th} data subset of the restored original user data set.

20. The method of claim 16, wherein each of the one or more AAL cells includes an ATM header and a Start of Packet field, which indicates a starting location of an i^{th} AAL packet.

21. The apparatus of claim 1, wherein i, j, N, and M are positive integers, $1 \leq i \leq n$, and $1 \leq j \leq M$.